

Name: _____

Worksheet – Simplifying Rational Expressions – Version 2

Directions: Please simplify the following expressions.

1. $\frac{5x+25}{7x+35}$

$$\frac{\cancel{5(x+5)}}{\cancel{7(x+5)}} = \frac{5}{7}$$

2. $\frac{-8y-12}{36+24y}$

$$\frac{-4\cancel{(2y+3)}}{12\cancel{(3+2y)}} = -\frac{1}{3}$$

3. $\frac{b^2-25}{b^2+6b+5}$

$$\frac{\cancel{(b-5)}\cancel{(b+5)}}{(b+1)\cancel{(b+5)}} = \frac{b-5}{b+1}$$

4. $\frac{m^2-5m-24}{m^2+8m+15}$

$$\frac{\cancel{(m-8)}\cancel{(m+3)}}{\cancel{(m+3)}(m+5)} = \frac{m-8}{m+5}$$

5. $\frac{x^2+10x+25}{x^2+8x+15}$

$$\frac{\cancel{(x+5)}\cancel{(x+5)}}{\cancel{(x+5)}(x+3)} = \frac{x+5}{x+3}$$

6. $\frac{8mb^3+16m^2b^2}{4mb^2+8bm^2}$

$$\frac{\cancel{8mb^2}\cancel{(b+2m)}}{4\cancel{mb}(b+2m)} = 2b$$

7. $\frac{r^2-64}{r^2-16r+64}$

$$\frac{\cancel{(r-8)}\cancel{(r+8)}}{\cancel{(r-8)}(r-8)} = \frac{r+8}{r-8}$$

8. $\frac{x^2-x-90}{x^2+11x+18}$

$$\frac{\cancel{(x-10)}\cancel{(x+9)}}{\cancel{(x+9)}(x+2)} = \frac{x-9}{x+2}$$

9. $\frac{3b^2-9b-84}{b^2-7b}$

$$\frac{3(b^2-3b-28)}{b(b-7)} = \frac{3\cancel{(b-7)}(b+4)}{b\cancel{(b-7)}} = \frac{3(b+4)}{b}$$

10. $\frac{5k^2 - 80}{10k - 40}$

$$\frac{5(k^2 - 16)}{10(k - 4)}$$

$$\frac{5(k-4)(k+4)}{2 \cancel{10}(k-4)} \quad \left(\frac{k+4}{2} \right)$$

11. $\frac{49m^2 - 1}{7m^2 - 34m - 5}$

$$\frac{(7m-1)(7m+1)}{(7m+1)(m-5)}$$

	m	-5
7m	7m ²	-35m
1	m	-5

$\left(\frac{7m-1}{m-5} \right)$

12. $\frac{6a^2b^2 - 24ab^3}{-6ab^2}$

$$\frac{\cancel{6ab^2}(a-4b)}{-1 \cancel{-6ab^2}}$$

-(a-4b)
or
-a+4b

13. $\frac{2x^2 - 7x - 4}{2x^2 + 7x + 3}$

$$\frac{(2x+1)(x-4)}{(2x+1)(x+3)}$$

	x	-4
2x	2x ²	-8x
1	x	-4

$\left(\frac{x-4}{x+3} \right)$

	2x	1
x	2x ²	x
3	6x	3

14. $\frac{5y^2 - 2y - 3}{y^2 - 2y + 1}$

$$\frac{(y-1)(5y+3)}{(y-1)(y-1)}$$

$\left(\frac{5y+3}{y-1} \right)$

	y	-1
5y	5y ²	-5y
3	3y	-3

15. $\frac{3y^2 - 27y - 42}{2y^2 - 13y - 7}$

$$\frac{3(y^2 - 9y + 14)}{(2y+1)(y-7)}$$

$$\frac{3(y-2)(y-7)}{(2y+1)(y-7)}$$

$\left(\frac{3(y-2)}{2y+1} \right)$

	y	-7
2y	2y ²	-14y
1	y	-7